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ARCHITECTURE'S CAPACITY TO CHALLENGE AND
EXTEND THE LIMITS OF OTHER DISCIPLINES

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Architecture and Vacancy

Empirical maps to read economic phenomena in contemporary cities

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Synopsis

The city evolves thanks to many forces, leading it to morphological modifications in the urban structure. These phenomena deposit signs, not always easily traceable. The presence of vacancy within the urban fabric is one of these. The distribution of vacant units, could be a useful indicator to comprehend economic conditions and territorial practices in a city system. The growing attention on data visualization and big data mapping to describe its evolution is giving us many possibilities in terms of dynamism and layering. The new technological possibilities, the mapping's tradition, typical of urban form, and the elasticity of architecture can improve the categories used in urban economics subjects, being helpful in better understand a so complex phenomenon.

Key words: Vacancy, Mapping, Urban Economics.

1. Mapping Urban Economics Phenomena

The city experienced different phenomena and it is the result of different additions and modifications. This overlapping of signs is the result of the changing in living habits of a specific population but also of the economic transitions. Indeed the urban tissue is able to record several factors changing the shape of the space.

To understand and study these transitions the mapping provides information about the tangible results of the social and economic forces (Vernez Moudon; 1997). The continuous traceability of the maps helps in describing the changes in urban form and its evolution. Economic and political cycles are, indeed, particularly influent on the city and were transversally mapped in many morphological types of research (Conzen; 1969) without the support of specific datasets. On the other hand, the growing attention on big data and open source statistics, have given us additional possibilities in term of mapping the relationship between the building, the use and its relation with the context. Since the '80 the role of the map in architecture and urban planning has changed and the Space Syntax experience, since the first Hiller's studies to now, describes it well. In addition, recent researches used data or images from the web to analyze and suggest new aggregation in the urban fabric according to clustering methods applied to amenities distribution (Hidalgo; 2015). Furthermore, geomorphological and statistic data were used to study specific urban matters as Chinese ghost towns: Xiaobin et al. (2017) created maps using mainly DMSP-OLS night-time light image data and Guanghua et al. (2015) used Baidu positioned data and POI to highlight the home location of a number of users¹ and describe the vacant parts of the city. Despite the enormous possibilities given by big data, not all the phenomena can be described with this type of maps. As a matter of fact, it is not always possible to obtain certain data, useful to analyze a specific phenomenon, because of privacy's policy, already combined information², national regulation.

2. Observing a specific phenomena: the vacancy

The vacancy is economic phenomena that have a significant influence in contemporary cities. It has a relevant significance in Europe as well as in America or Asia. In China, in particular, it has a great consistency: Gleaser (2017), has estimated that the quantity of empty houses, including those built and those sold but remained uninhabited, is around 1.86 billion square meters. Credit Suisse, using data from the Shanghai University, speaks of 49 million houses, equivalent to 22% of vacancy³ (Shepard; 2015). This data assumes a further importance thinking that in Chinese economic system, construction is one of the driving sectors.

With the term vacancy, the economic discipline traditionally refers to a part of built space, inside the market, that is unallocated or unrented at any given time. It is

¹ DBSCAN algorithm based on users position from 9.00 am to 6.00 pm. This system uses a density-based spatial clustering system

² very often data are already aggregate to support a specific point of view, in this form it is impossible to be used as single information and obtain a different visualization

³ the "normal" vacancy rate cannot be a global index, it needs to be evaluated per country in relation with the local market and dynamics, anyhow even in Chinese context this percentage it is considered worrying (See Haizhou Huang "Discussion on China's Housing Market: What we know? What we don't" for International Symposium on Housing and Financial Stability in China, Shenzhen December 2015)

normally defined through a percentage that can be used to investigate the residential or commercial sector as an indicator to understand the trend of the market in a particular city or portion of it. The economical bibliography offers a genealogy of the topic useful to understand its definition and composition (Frank S. Kristof; 1965, White; 1970, Rosen and Smith; 1983, Gabriel and Nothaft; 1988). Recent works are able to highlight the complexity of it demonstrating a relation with social and cultural factors (Keenan et al.; 1999, Granadier; 1995, Hoekstra and Vakili-Zad; 2009, Cheshire et al.; 2015).

Moreover there is also a spatial and environmental implication attested by several recent studies that, in some way consider the vacancy as the reason or result for other urban phenomena: the New Town (Bonino, 2017), the Ghost cities (Shepard, 2015) and the Megacities (Berg et al., 2014). The topic was also studied in relation to the "shrinkage" of the cities, due mostly to the depopulation (Couch et Cocks 2013)⁴. However, it is in relation to the building speculation that the effects of the vacancy have had a greater spatial relevance (Marcinkoski 2015). Anyhow the privileged observation point is always the economic one. Instead, trying to observe the presence of unallocated spaces within the urban fabric, the results are sometimes different from those obtained using real estate or property data. This gap suggests, especially in some contexts, do not forget the contribution of information that space itself can offer.

3. Case study and possible methodology

In the specific case of the vacancy in the Chinese context, collect direct data as energy and gas consumption per unit, mail delivery flow, use of internet services⁵. Because of that an indirect methodology, based on field observation and mapping, might be useful.

A first trial has been conducted in a Nanjing's district, LaoMen Dong in the south part of the city where a recent renovation plan (2013) realized 80 urban villas in Ming traditional style. On field observation disclose the presence of high vacancy in contrast with the data that show a complete allocation of the units (Fig. 1-2-3).

To confirm the presence of residents the first example of a map has been the identification of air conditioning units⁶ on the roof of the building (Fig. 4) compared with the previous observation.

This work has allowed the identification of a 'use component' of the vacancy not recognizable with other data collected through public resources or private agencies.

⁴ In this case, the phenomenon was observed in the city of Liverpool identifying, among the determinants of the vacancy, the contraction of the industrial system

⁵ These are some of the possible data that can be used to analyze straightly the vacancy and eventually create a map of it

⁶ An element that is not only recognizable but also always present in Chinese commodity and luxury houses



Figure 1. Position of houses in LaoMen Dong.

Figure 2. Allocated Unit in Yellow based on data.

Figure 3. Vacant Unit, in blue based on field observation.



Figure 4. Identification of roof air conditioning.

4. Conclusions

Space still offers information not always recognized by official data. For example in some Chinese districts the public data, as well the real estate market news, describe portions of the territory sold out even in the presence of completely unused residential complexes. The reasons for this discrepancy are different but what is really interesting, in this context, is the recognizing of the need of a direct cognitive approach, based on the recognition of some presences and recurrences.

5. Bibliography

- BERG, Per Olf and Emma BIJORNER, 2014. *Branding Chinese Mega-Cities*. Cheltenham: Edward Elgar. ISBN-13: 978-1783470327
- BONINO, Michele, 2017. Chinese New TOWns: negotiating citizenship and physical form, "La ricerca dei talenti"
- CHESHIRE, Paul, HILBER, Christian A. L., KOSTER Hans R. A., 2015. *Regulating Housing Vacancies Away? the Paradoxical Effects of Mismatch*, working paper for SERC Institute, July 27.
- CONZEN, Michael Robert Günter, 1969. *L'analisi della forma urbana: Alnwick Northumberland*. Milano: Franco Angeli. ISBN-13: 978-8820411268.
- COUCH, Chris and COCKS Matthew, 2013. Housing Vacancy and the Shrinking City. *Trends and Policies in the UK and the City of Liverpool*, *Housing Studies*, no. 28(3), pp. 499-519. ISSN: 0267-3037 (Print) 1466-1810 (Online)
- GABRIEL, S.A., NOTHAFT, F.E., 1988. Rental Housing Markets and the natural vacancy rate, *AREUEA Journal*, no. 16, pp. 419-429.
- GLAESER, Edward, WEI, Huang, YUERAN, Ma, SHLEIFER, Andrei, 2017. A Real Estate Boom with Chinese Characteristics, *Journal of Economic Perspectives*, vol.31, no. 1, pp. 93-116.
- GRENADIER, Steven, 1995. Local and National Determinants of Office Vacancies, *Journal of Urban Economics*, no. 37, pp. 57-71.
- GUANGHUA, Chi et al., 2015. *Ghost Cities' Analysis Based on Positioning Data in China*, Cornell University, November.
- HOEKSTRA, Joris, VAKILI-ZAD, Cyrus, 2011. High vacancy rates and rising house prices: the Spanish paradox, *Tijdschrift voor Economische en Sociale Geografie*, vol. 102, no. 1, pp. 55-71. DOI:10.1111/j.1467-9663.2009.00582.x
- KEENAN, Paul and Stuart LOWE and Sheila SPENCER, 1999. Housing abandonment in inner cities-The politics of low demand for housing, *Housing Studies*, no. 40(5), pp. 703-716.
- KRISTOF, Frank S., 1965. Housing Policy Goals and the Turnover of Housing, *Journal of the American Institute of Planners*, n. 31, pg. 232-45, August.
- MARCINKOSKI, Christopher, 2015. *The city that never was*. New York: Princeton Architectural Press. ISBN-13: 978-1616893903.
- MOUNDON, Vernez, Anne, 1997. Urban Morphology as an Emerging Interdisciplinary Field, *Urban Morphology* 1, January, pg 3-10.
- ROSEN, K.T., SMITH, L.B., 1983. The price-adjustment process and the natural vacancy rate, *American Economic Review*, no. 83, pp. 779-786.
- SHEPARD, Wade, 2015. *Ghost Cities of China: The Story of Cities without People in the World's Most Populated Country*. London: Zed Books. ISBN-13: 978-1783602186.
- WHITE, Harrison Colyar, 1970. *Chains of Opportunity. System Models of Mobility in Organizations*. Cambridge: Harvard University Press. ISBN: 978-0674106741.
- WHITEHAND, J. W. R., GU Kai, WHITEHAND Susan M., 2011. Fringe belts and socioeconomic change in China, *Environment and Planning B: Planning and Design*, 38(1), pp. 41-60.
- XIAOBIN, Jin, YING, Long, WEI, Sun, YUYING Lu, XUHONG Yang, JINGXIAN Tang, 2017. Evaluating Cities' Vitality and Identifying Ghost Cities in China with Emerging Geographical Data, *Cities*, n. 63, pg. 98-109, March. <http://dx.doi.org/10.1016/j.cities.2017.01.002>.
- XIAO Yang, WEBSTER Chris, 2016. *Urban Morphology and Housing Market*. Singapore: Springer. ISBN-13: 978-9811027611.

Biography

Elena Pressacco. PhD student in Architecture History and Project in Politecnico of Turin. Her interdisciplinary research deal with Urban Morphology and Urban Economics with a specific focus on vacancy and real estate bubble in post-socialist countries. During the last year, she had the possibility to develop her research also at Tsinghua University (Beijing) and Southeast University (Nanjing) as visiting Ph.D. Her parallel research interests are Industrial Heritage, Digital Fabrication, and Contemporary typo-Morphological analysis.